UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,543	10/12/2001	Genady Grabarnik	YOR920010748US1	1486

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EXAMINER
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ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
	09/976,543	GRABARNIK ET AL.
Office Action Summary	Examiner	Art Unit	
	Kelvin Lin	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/12/02*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

Detailed Action

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-9, 11, and 13-27 are rejected under 35 USC 102(e) as being

anticipated by Hellerstein et al., (U.S. Patent 6697791).

3.   Regarding claim 1, Hellerstein teaches a method for use in accordance with an

event management system, the method comprising the steps of:

- automatically generating one or more event relationship networks

    from event data, wherein an event relationship network comprises

    nodes representing events and links connecting correlated nodes

    (Hellerstein, col. 3, l.38-41, "..systematically constructing one or

    more correlation rules... for managing a network with one or more

    computing devices", col.5, l.16-30, " ... computing device

    connected to the event management system..", here, computing

    device denotes a "node", and connection denotes a "link"; and

- utilizing the one or more generated event relationship networks to construct one or more correlation rules for use by a correlation engine in the event management system (Hellerstein, col. 4, l.67, col.5, l.1-3, col.6, l.66-67) .

4.   Regarding claim 2, Hellerstein further discloses the method of claim 1, further comprising the step of subjecting the one or more generated event relationship networks to human review prior to utilizing the one or more generated event relationship networks to construct the one or more correlation rules (Hellerstein, col.6, l.31-33, l.40-48).

5.   Regarding claim 3, Hellerstein further discloses the method of claim 1, wherein, when one or more previously generated event relationship networks are available, the step of automatically generating one or more event relationship networks comprises:

- obtaining one or more previously generated event relationship networks (Hellerstein, col. 6, l.49-58);

- validating the one or more previously generated event relationship networks by removing any nodes or links included therein that are incorrect for a particular application context (Hellerstein, col.9, 52-67,col.10, l.1-7);

- completing the one or more previously generated event relationship networks by adding any nodes or links thereto that are missing for the particular application context (Hellerstein, col.9, l.61-65);

- outputting the one or more validated and completed event

  relationship networks as the one or more event relationship

  networks used to construct the one or more correlation rules

  (Hellerstein, col.9, l.5-10, col.12, l.39-40).

6.   Regarding claim 4, Hellerstein further discloses the method of claim 3, wherein

the validating and completing steps utilize a statistical correlation analysis

(Hellerstein, col. 3, l.15).

7.   Regarding claim 5, Hellerstein further discloses the method of claim 4, wherein

the statistical correlation analysis utilizes pairwise correlation analysis, wherein

correlation between a pair of events is measured in accordance with one or more

statistical measurements (Hellerstein, col. 10, l. 14-16, ".. confidence level is

attained" which is a statistical measurement).

8.   Regarding claim 6, Hellerstein further discloses the method of claim 3, wherein

the validating step comprises, for a particular event relationship network,

determining that links in the event relationship network have a confidence level

not less than a given threshold (Hellerstein, col.10, l.15).

9.   Regarding claim 7, Hellerstein further discloses the method of claim 3, wherein

the validating step, for a particular event relationship network, comprises:

- splitting the event relationship network into correlation paths

  (Hellerstein, col.3, l.50-54, col.7, l.24-30);

- for every correlation path, removing a node that has the

  least number of correlated nodes associated therewith until every

node is fully correlated with every other node (Hellerstein, col.7,

l.33-35); and

- merging correlation paths into one or more event relationship

    networks such that every path in a resulting event relationship

    network has every node fully correlated with every other node in

    the path (Hellerstein, col.7, l.37-47).

10.   Regarding claim 8, Hellerstein further discloses the method of claim 1, wherein,

when one or more previously generated event relationship networks are not

available, the step of automatically generating one or more event relationship

networks comprises:

- mining patterns from the event data (Hellerstein, col.7, l.1-8);

- utilizing the mined patterns to construct the one or more event

    relationship networks (Hellerstein, col.6, l.67, col.7, l.6-8);

- outputting the one or more event relationship networks constructed

    from the mined patterns as the one or more event relationship

    networks used to construct the one or more correlation rules

    (Hellerstein, col.7, l.16-17).

11.   Regarding claim 9, Hellerstein further discloses the method of claim 8, wherein

the constructing step utilizes a statistical correlation analysis to mine patterns

(Hellerstein, Fig.2, col. 10, l.15, ".. confidence level means risk level which is a

statistical analysis...").

12.   Regarding claim 11, Hellerstein further discloses the method of claim 1, wherein

the event data is obtained from an event log representing historical events

associated with a particular system being managed by the event management

system (Hellerstein, col. 6. l.44).

13.   Regarding claim 13, Hellerstein further discloses the method of claim 1, wherein

the event data is preprocessed prior to use in generating the one or more event

relationship networks by removing at least a portion of any redundant events

(Hellerstein, col.10, l.46-48).

14.   Regarding claims 14-26 have similar limitations as claims 1-13. Therefore, they

Are rejected under Hellerstein for the same reasons set forth in the rejection of

claims 1-13.

15.   Regarding claim 27 has similar limitations as claim 1. Therefore, it

is rejected under Hellerstein for the same reasons set forth in the rejection of

claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

16.   Claims 10, and 12 are rejected under 35 U.S.C 103(a) as being

unpatentable over Hellerstein in view of Busche (US Patent 6493723).

17.   Regarding claims 10 and 12, Hellerstein differs from the claimed invention

in that it does not explicitly indicate the step of constructing the relationship

networks utilizes pairwise correlation analysis to mine patterns, and statistical

correlation between nodes. However, Busche clearly teaches that to discover

any correlation rules between the purchase of some items and the purchase of

other items. Specifically, given two non-intersecting sets of items, e.g., sets X

and Y, one may attempt to discover whether there is a rule "if X was purchased,

then Y was purchased," and the rule is assigned a measure of support and a

measure of confidence that is equal or greater than some selected minimum

levels. The measure of support is the ratio of the number of records where both

X and Y were purchased divided by the total number of records. The measure of

confidence is the ratio of the number of records where both X and Y were

purchased divided by the number of records where X was purchased (Busche,

col.5, l.13-38, 55-57). Statements described above constitute the method for

pairwise correlation analysis, and comprise the annotations relating to statistical

between nodes.

Combines with Hellerstein's correlation rules for event management and

Busche's data mining analysis to ascertain warranty issues that improves the

formulation of the correlation relationship between nodes. Therefore, it would

have been obvious to one of ordinary skill in the art at the time the invention was

made to combine Hellerstein's correlation rule design for event management with

Busche's data mining analysis improve the formulation of the relationship

between nodes.

Conclusion

The prior art made of record and not relied upon is considered pertinent to application's disclosure.

- Fischthal S., (Patent No. 5822741) Neural Network Conceptual Clustering Fraud Detection Architecture.

- Du et al., (Pataen No. 6694364) System and Method For Suppressing Out-Of_Order Side-Effect Alarms in Heterogeneous Integrated Wide Area Data And Telecommunication Networks.

- Hutten H., (Patent No. 6571120) Apparatus For Identifying The Circulatory Effects Of Extrasystoles.

- Yuste et al., (PG Pub No. 2004/0015310) Method and System For Analyzing Multi-Dimensional Data.

- NPL – Jian et al., PrefixSpan: Mining sequential patterns efficiently by prefix-project pattern growth, Data Engineering, 2001, Procedings, 17th International Conference on 2-6, 2001.
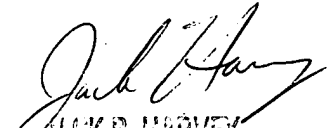
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Lin whose telephone number is 703-605-1726. The examiner can normally be reached on Flexible 4/9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jack Harvey can be reached on 703-305-9705. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

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JACK B. HARVEY
SUPERVISORY PATENT EXAMINER